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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/035,154	01/04/2002	Makoto Nokita	03560.002974	1768
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EXAMINER
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HO, ALLEN C

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/035,154

Applicant(s)

NOKITA, MAKOTO

Examiner

Allen C. Ho

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-18 and 20-24 is/are rejected.
- 7) ☒ Claim(s) 8 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 875 in Fig. 8B. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4-6, 12, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Griesmer *et al.* (U. S. Patent No. 5,379,335).

Griesmer *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object, comprising: a grid movement controller (26) for controlling a movement of a grid (10) which can move reciprocatingly; an input unit (24) for inputting a method parameter relating to a radiographic method; an imaging controller (26) for setting a movement parameter (22) relating to the movement of the grid to be used by the grid movement controller, based on the method parameter input by the input unit, wherein the movement parameter

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comprises at least information relating to a movement speed of the grid (column 7, lines 30-33), an effective period between a beginning and a turn of the grid movement (Fig. 7), a standard radiation exposure time (column 7, lines 16-22).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griesmer *et al.* (U. S. Patent No. 5,379,335) as applied to claims 1 and 12 above, and further in view of Tsukamoto *et al.* (U. S. Patent No. 5,666,395).

Griesmer *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object, comprising an x-ray film cassette (16).

However, Griesmer *et al.* did not teach that the radiographic apparatus employs a sensor unit including a plurality of pixels instead of an x-ray film cassette.

Tsukamoto *et al.* disclosed a radiographic apparatus that employs a digital x-ray detector for obtaining a radiograph of an object.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to replace the x-ray film cassette with a digital x-ray detector, since a person would be motivated to obtain an image in real time in order to expedite the diagnosis of a patient.

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6. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griesmer *et al.* (U. S. Patent No. 5,379,335) as applied to claims 1 and 12 above, and further in view of Daniels *et al.* (U. S. Patent No. 4,160,906).

Griesmer *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object, comprising an input unit (24) for inputting a method parameter relating to a radiographic method.

However, Griesmer *et al.* did not teach that the method parameter comprises at least information relating to a section of the object to be imaged.

Daniels *et al.* disclosed a radiographic apparatus, which allows a user to set the method parameter (13) by selecting a section of the object to be imaged (16).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a method parameter that is related to a section of the object to be imaged, since a person would be motivated to produce a high-quality diagnostic image, while minimizing the dose to the patient, proper selection of method parameters based on anatomical knowledge is essential.

7. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griesmer *et al.* (U. S. Patent No. 5,379,335) as applied to claims 1 and 12 above, and further in view of Ochmann *et al.* (U. S. Patent No. 4,797,905).

Griesmer *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object, comprising: an imaging controller (26) for setting a movement parameter (22) relating to the movement of the grid to be used by the grid movement controller, based on the method parameter input by the input unit.

However, Griesmer *et al.* did not teach that the movement parameter comprises at least information relating to an upper limit and a lower limit of an effective radiation exposure time corresponding to the method parameter.

Ochmann *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object, wherein the exposure time does not exceed an upper limit value and a lower limit value (column 1, lines 15-18).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to set an upper limit and a lower limit on the exposure time, since a person would be motivated to protect a patient from over exposure while achieving satisfying image quality.

8. Claims 9, 10, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griesmer *et al.* (U. S. Patent No. 5,379,335) as applied to claims 1 and 12 above, and further in view of Schol (U. S. Patent No. 6,178,228 B1).

Griesmer *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object, comprising: an input unit (24) for inputting a method parameter relating to a radiographic method; an imaging controller (26) for setting a movement parameter (22) relating to the movement of the grid to be used by the grid movement controller, based on the method parameter input by the input unit.

However, Griesmer *et al.* did not teach that the radiographic apparatus further comprising a display device for displaying the movement parameter and a modifying unit for modifying the movement parameter.

Schol disclosed an interactive user interface that displays operating parameters and allows the user to modify the operating parameters.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a user interface that displays the movement parameter and allows the user to modify the movement parameter, since a person would be motivated to provide a means for the radiographic apparatus to communicate with the user interactively so that the radiographic apparatus could respond to the user effectively.

9. Claims 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griesmer *et al.* (U. S. Patent No. 5,379,335) as applied to claims 1 and 12 above, and further in view of Ammann *et al.* (U. S. Patent No. 4,803,716).

Griesmer *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object, comprising an imaging controller (26) for setting a movement parameter (22) relating to the movement of the grid to be used by the grid movement controller.

However, Griesmer *et al.* did not teach that the radiographic apparatus further comprises an exposure time acquisition unit for measuring or acquiring data relating to an actual radiation exposure time, wherein the movement parameter to be set by the image controller is modified based on the data measured or acquired by the exposure time acquisition unit.

Ammann *et al.* disclosed a radiographic apparatus that comprises an exposure time acquisition unit (6) for measuring or acquiring data relating to an actual radiation exposure time (column 1, lines 54-55).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an exposure time acquisition unit for measuring or acquiring data

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relating to an actual radiation exposure time, since a person would be motivated to set up a feedback circuit to calibrate the exposure time and the movement parameter to ensure the patient would not be exposed to prolonged radiation exposure.

10. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griesmer *et al.* (U. S. Patent No. 5,379,335) as applied to claims 1-6, 9-17, and 20-22 above, and further in view of Garland *et al.* (U. S. Patent No. 6,244,507 B1).

Griesmer *et al.* disclosed a radiographic apparatus and method for obtaining a radiograph of an object.

However, Griesmer *et al.* did not teach that a software program comprising codes for realizing the functions of the radiographic apparatus is stored on a computer-readable storage medium.

Garland *et al.* taught storing the computer program for realizing the functions of a radiographic apparatus on a computer-readable storage medium.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to store the computer program for realizing the functions of a radiographic apparatus on a computer-readable storage medium, since a person would be motivated to upgrade a functions of a system, and upgrading a computer program is much more efficient and cost effective than upgrading hardware.

***Allowable Subject Matter***

11. Claims 8 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

The allowable subject matter in claims 8 and 19 refers to a radiographic apparatus and method for obtaining a radiograph of an object according to claims 7 and 18, wherein a standard radiation exposure time is determined by dividing an interval between the upper limit and the lower limit by a ratio of  $m:n$ , where  $m$  and  $n$  are natural numbers.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- (1) Goto (U. S. Patent No. 6,480,574 B2) describes an x-ray diagnostic apparatus comprising a grid and a Moire correction circuit.
- (2) Tamura *et al.* (US 2002/0001366 A1) describe an image apparatus, method, and storage medium.
- (3) Sako (U. S. Patent No. 6,157,700) describes an image reading apparatus.
- (4) Heidsieck (U. S. Patent No. 5,218,625) describes a method for the automatic determination of the exposure time of a radiographic film and system.

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- (5) Schmitmann *et al.* (U. S. Patent No. 3,916,192) describe an x-ray diagnostic apparatus including a control panel having operating keys for the organ-wise-programmed setting of exposure data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (703) 308-6189. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached at (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Allen C. Ho  
Examiner  
Art Unit 2882

ACH  
December 7, 2002

  
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SUPERVISORY PATENT EXAMINER  
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